

1   **WHAT IS CLAIMED IS:**

- 2           1. An injection joint for an intravenous (IV) device tube and comprising  
3           a connector with a first internal passage, an inlet, an outlet and a sealed  
4           injection port, wherein the inlet communicates with the first internal passage, the  
5           outlet communicates with the first internal passage and the sealed injection port  
6           comprises  
7           an injection port socket formed on the connector and comprising  
8           a proximal end;  
9           a distal end;  
10          a sidewall having an inner face with a bottom;  
11          a bottom plane having a center;  
12          a protrusion having a top and a second internal passage and formed  
13          integrally with and extending from the center of the bottom plane of the injection  
14          port socket, wherein the second internal passage communicates with the first  
15          internal passage in the connector; and  
16          an annular groove formed around the bottom of the inner face of the  
17          sidewall;  
18          a resilient plug attached to the injection port socket and comprising  
19          a cylindrical neck with a top end and a bottom;  
20          an eccentric cavity formed in the neck;  
21          a tapered flange integrally formed with and extending upward from  
22          the top end of the neck wherein the tapered flange is larger than the neck; a  
23          bottom tube formed integrally with and extending downward from the bottom of  
24          the neck and mounted on the protrusion in the injection port socket, wherein the

1 bottom tube is larger than the the neck and has  
2 an annular constriction formed around the bottom tube; and  
3 multiple through holes; and  
4 an annular shoulder formed where the neck joins the bottom tube;  
5 and  
6 a cap attached to the injection port socket, mounted around the  
7 resilient plug and comprising  
8 a distal end;  
9 a proximal end;  
10 a threaded nipple formed integrally with and extending upward  
11 from the distal end of the cap and having an axial passage, a top end and an  
12 opening formed in the top end, wherein the opening corresponds to the tapered  
13 flange of the resilient plug and the neck of the resilient plug is mounted in the  
14 axial passage in the threaded nipple and the tapered flange of the resilient plug is  
15 mounted in the opening in the threaded nipple when the resilient plug is mounted  
16 in the cap;  
17 a mounting ring formed integrally with and extending downward  
18 from the proximal end of the cap, wherein the mounting ring is mounted in the  
19 injection port socket; and  
20 a annular lip formed integrally with and extending radially out from  
21 the mounting ring, wherein the annular lip corresponds to and is securely held in  
22 the annular groove.

23 2. The injection joint for an intermediate device tube as claimed in claim  
24 1, wherein the connector is tubular.

1           3. The injection joint for an intermediate device tube as claimed in claim  
2   2, wherein the tubular connector is Y-shaped.

3           4. The injection joint for an intermediate device tube as claimed in claim  
4   2, wherein the tubular connector is T-shaped.

5           5. The injection joint for an intermediate device tube as claimed in claim  
6   1, wherein the connector has

7           an intermediate container having

8           a top;

9           a bottom;

10          a wide upper opening at the top; and

11          an outlet at the bottom and adapted to be connected to a hypodermic  
12 needle through a lower IV tube; and

13          a lid mounted on the wide upper opening of the intermediate container

14 and having an inlet adapted to be connected to an IV solution container through

15 an upper IV tube.

16          6. The injection joint for an IV device tube as claimed in claim 1,

17 wherein the protrusion of the injection port socket is tapered and the bottom tube

18 of the resilient plug is tapered and corresponds to the protrusion in the injection

19 port socket.

20          7. The injection joint for an IV device tube as claimed in claim 1,

21 wherein the eccentric cavity is formed inside half of the neck.